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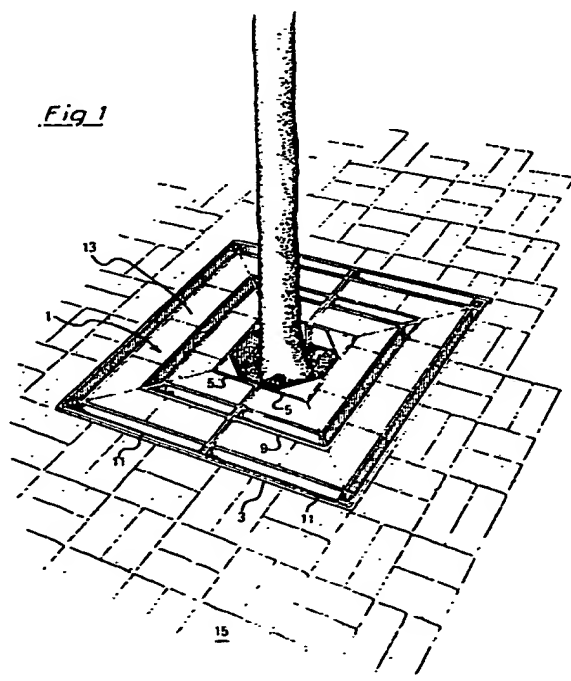
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(54) **Drainage channel assembly suitable for installation around a tree or shrub etc**

(57) A drainage channel assembly for installation around a tree or shrub to aesthetically enhance the region around the tree or shrub whilst allowing water to drain away into the ground, comprises at least two sections (1) which can be located in a main frame (3) to surround a central open region through which a tree or shrub can project when the assembly is installed and in use. Each section (1) comprises a trough (5, 7) into which paving blocks (13) can be located, and at least part of a drainage channel (9, 11) extending along the outer edge of the trough (5, 7) with respect to the assembly, the troughs (5, 7) and drainage channels (9, 11) of adjacent sections (1) each forming a closed loop in the assembly. Thus the troughs (5, 7) can be filled with paving blocks (13) which are the same as the surrounding area, thereby enhancing the appearance of the area.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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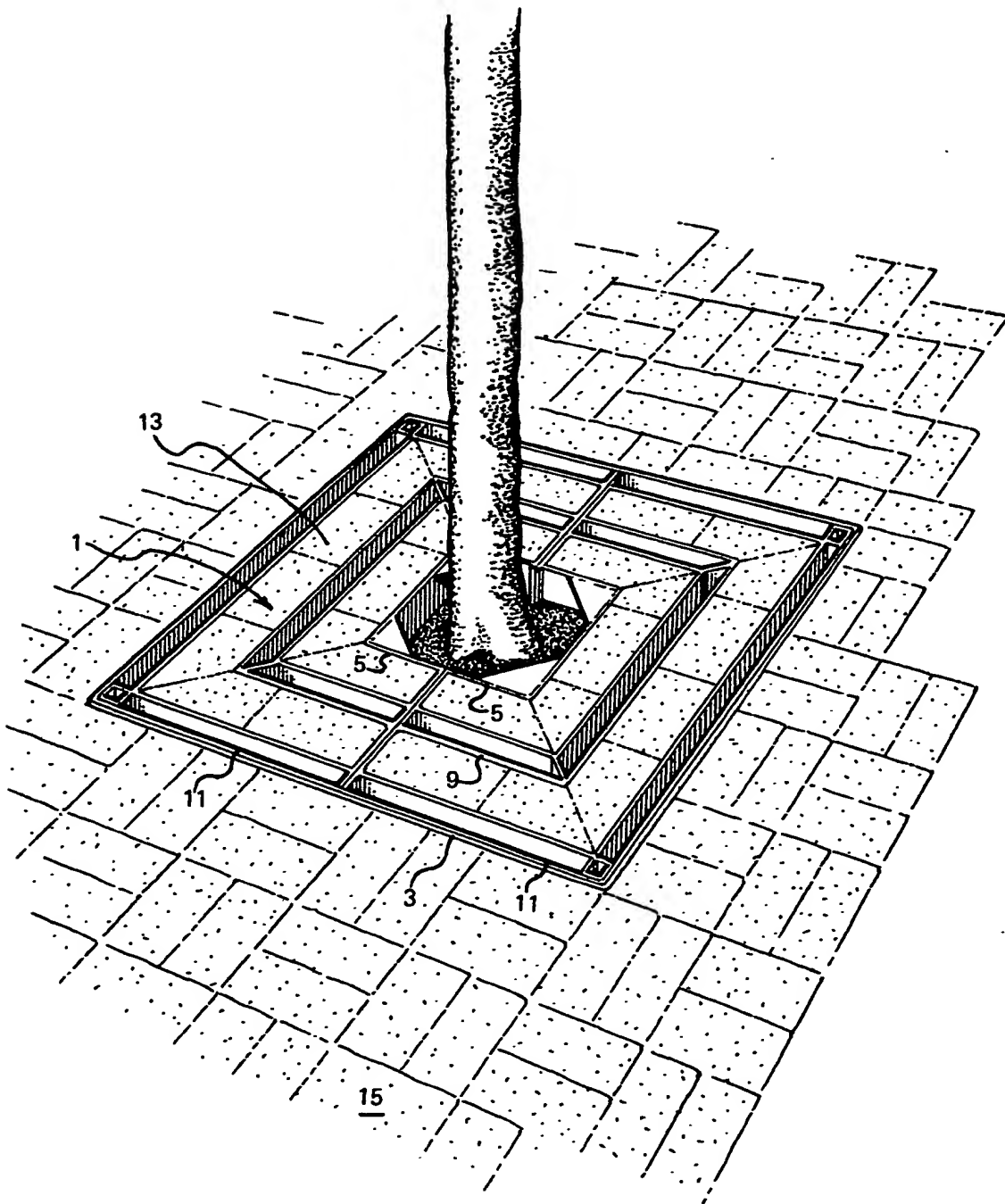


Fig 1.

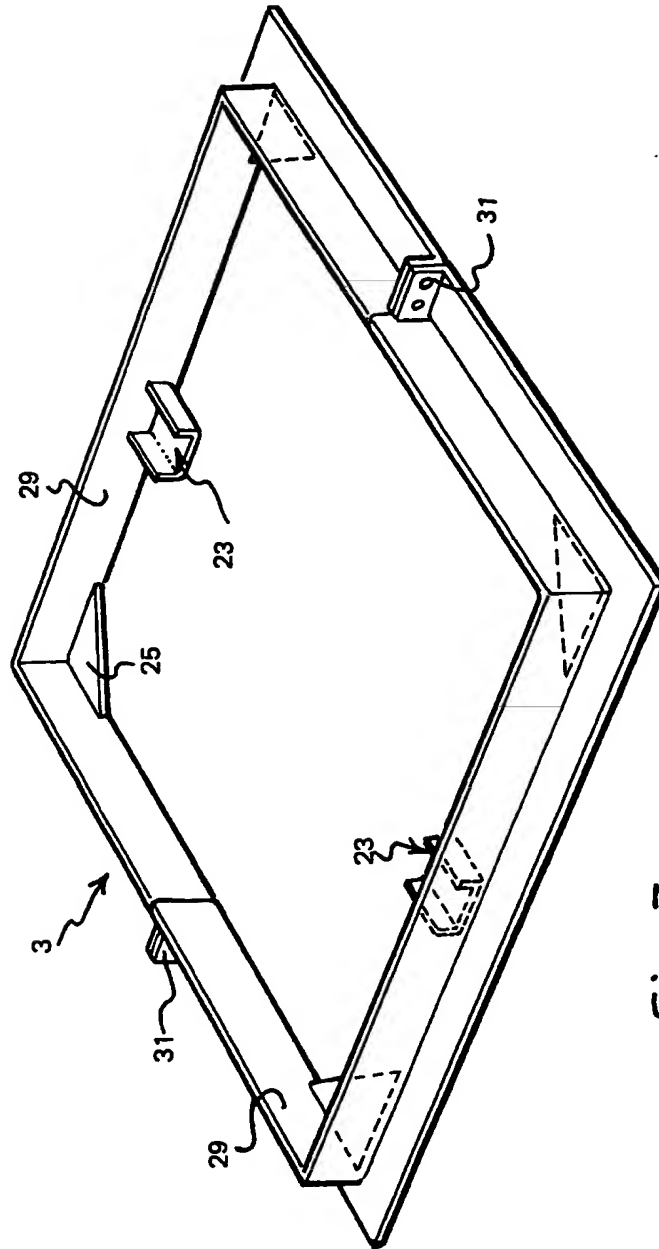


Fig. 3.

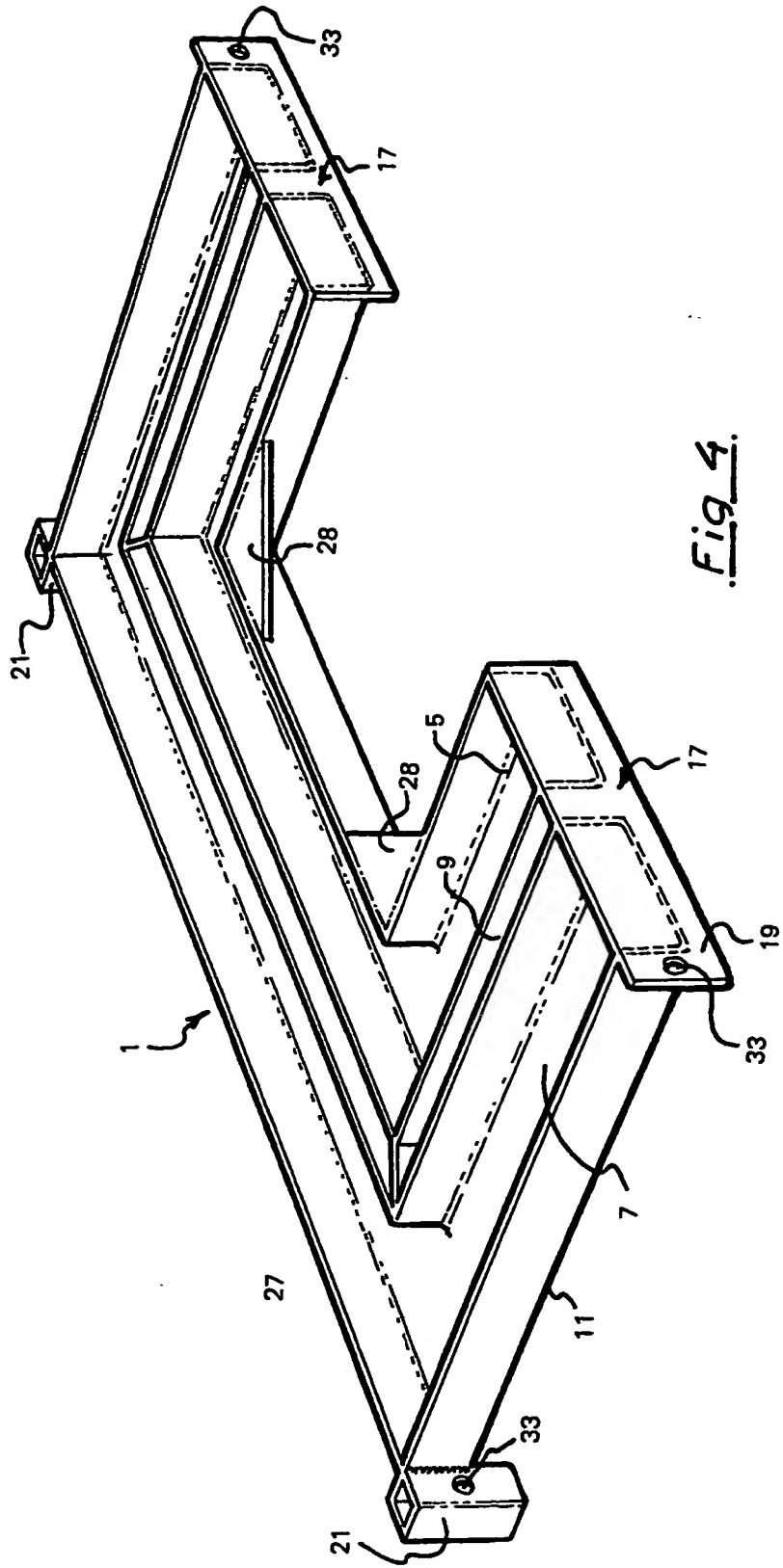


Fig. 4.

DESCRIPTION

IMPROVEMENTS RELATING TO DRAINAGE CHANNELS

The present invention relates to a drainage channel assembly.

- 5 In particular the present invention relates to a drainage channel assembly for installation around a tree or shrub to aesthetically enhance the region around the tree or shrub, whilst allowing water to drain away into the ground surrounding the tree or
- 10 shrub, i.e. to allow the tree or shrub to be watered, and protecting the roots.

Various gratings are already known for this purpose, though these known gratings do not blend with the surrounding area.

- 15 The aim of the present invention is to provide a drainage channel assembly which can be used around a tree or shrub and which can be blended into a surrounding paved area to thus maximise the general aesthetics of the area.

- 20 According to the present invention there is provided a drainage channel assembly comprising at least two sections which can be located in a main frame to surround a central open region through which a tree or shrub can project when the assembly is
- 25 installed and in use, each section comprising a trough into which a paving block can be located, and at least

part of a drainage channel extending along the outer edge of the trough with respect to the assembly, the troughs and drainage channels of adjacent sections
5 each forming a closed loop in the assembly.

In a preferred embodiment of the present invention there are two sections, each section being generally C-shaped. Each C-shaped section has two C-shaped troughs and two C-shaped drainage channels, one trough
10 with an outer drainage channel being located effectively radially within the other trough and outer drainage channel. Preferably the C-shaped troughs are each formed by straight sections so that standard rectangular paving blocks can be used to fill the
15 troughs and thus blend the assembly with a surrounding paved area. Alternatively the C-shaped sections and troughs may be arcuate with suitably shaped paving blocks being then required to fill the troughs.

In the preferred embodiment of the present
20 invention the main frame is rectangular and constructed in sections, preferably two C-shaped sections. These main frame sections are thus located generally around a tree or shrub and the surrounding paved area is then extended up to the edge of the main
25 frame. The two C-shaped sections are then merely located in the main frame with paving blocks which preferably match the surrounding paved area, filling

th troughs. Th paving blocks in th troughs thus extend the planar paved surface to a position close to the tree or shrub.

Whilst the preferred embodiment of the present invention has two effectively concentric troughs and drainage channels, any number of concentric troughs and drainage channels can of course be provided.

In any embodiment of the present invention the sections are preferably designed so that when located in the main frame, the bases of the troughs are located above ground level allowing for the protection of roots and the maximum drainage of water into the ground.

To allow for access to the tree roots etc., for whatever reason, the sections are preferably provided with suitably located apertures into which an appropriate hand tool can be inserted. The sections can then be simply lifted out of the main frame.

The present invention will now be further described, by way of example, with reference to the accompanying drawings, in which:-

Fig.1 illustrates a preferred embodiment of the present invention installed and in use;

Fig.2 is a fragmented plan view of the drainage channel assembly of Fig.1;

Fig.3 is a p r spective view of the main frame of the assembly of Fig.2;

Fig.4 is a perspective view of a section used in the main frame of Fig.3 to achieve the assembly of
5 Fig.2; and

Fig.5 is a cross-sectional view of part of the assembly of Fig.2 showing how a section is in part supported in the main frame.

A preferred embodiment of the present invention is
10 illustrated in the accompanying drawings and comprises two generally C-shaped sections 1 which are engaged in a rectangular main frame 3 - see Fig.3. Said sections 1 each comprise two C-shaped troughs 5 and 7, one trough 5 being located effectively radially within the
15 other trough 7 with a narrow drainage channel 9 formed therebetween, and a further drainage channel 11 extending around the outer edge of the outermost trough 7. Said further drainage channel 11 is defined by a wall of the main frame 3 and a wall of the
20 outermost trough 7.

Each of the troughs 5, 7 in each section 1, is made of three elongate, straight sections so that standard rectangular paving blocks 13 (see Fig.1) can be used to fill each trough 5, 7 and form a
25 continuation of the surrounding paved area 15. The blocks 13 can be cemented in position, laid on a bed

of sand and cement in each trough 5, 7, or merely located in each trough 5, 7. As best seen in Fig.4 the troughs 5, 7 of each section 1 are closed at each end by a planar plate 17 which extends below the base of the troughs 5, 7 and outwardly beyond the outer wall of the outermost trough as at 19. Further, corner posts 21 are secured at the corners of the generally squared C-shape, these corner posts likewise projecting below the level of the bases of the troughs 5, 7. The extensions 19 of the planar plates 17 and the corner posts 21 engage the inner wall of the main frame 3 to locate the section 1 in the main frame 3 so as to define a uniform width outer drainage channel 11, the planar plates 17 being supported on inwardly projecting portions 23 of the main frame 3 and the corner posts 21 resting on corner webs 25 which also strengthen the construction of the main frame 1. To further strengthen the construction of each section, webs 27 extend across the inner drainage channel 9 and webs 28 are provided at the corners of the central aperture 29 defined by said sections 1.

In use the main frame 3 which is formed by two C-shaped parts 29 is located around a tree or shrub, said parts 29 being bolted together at 31. The main frame 3 has slots 32 for use in fixedly securing the frame in the desired position. The surrounding paved area 15 is then extended up to the edge of the main

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fram 3 and two of the C-shaped sections 1 with the
troughs 5, 7 filled with paving blocks 13 which match
the surrounding paved area 15, are located in the main
frame 3 so that the troughs are supported by the
5 corner posts 21 and extensions 19 resting on the
corner webs 25 and projections 23 respectively, above
ground level. Water draining through the drainage
channels 9 and 11 can thus drain away through the
ground to a maximum extent.

10 Whilst the above described preferred embodiment of
the present invention has two troughs 5, 7 and two
drainage channels 9, 11, any number of troughs and
drainage channels can be provided. Further, whilst
the above described troughs 5, 7 are constructed from
15 straight sections to allow the use of conventional
paving blocks 13, the troughs can alternatively be
arcuate with specially shaped paving blocks being
provided.

20 To cater for the possibility that the sections 1
may need to be removed at some time, corner posts 21
and extensions 19 are provided with apertures 33 into
which an appropriate tool can be inserted and the
sections 1 lifted.

25 The present invention thus provides a simple
drainage channel assembly which enables the
surrounding paving to be extended to the tree or shrub
which the assembly surrounds, thus enhancing the
aesthetics of the area.

CLAIMS

1. A drainage channel assembly comprising at least two sections which can be located in a main frame to surround a central open region through which a tree or shrub can project when the assembly is installed and in use, each section comprising a trough into which a paving block can be located, and at least part of a drainage channel extending along the outer edge of the trough with respect to the assembly, the troughs and drainage channels of adjacent sections each forming a closed loop in the assembly.

2. An assembly as claimed in claim 1, in which there are two sections, each section being C-shaped and having two C-shaped troughs and two C-shaped drainage channels, one trough with an outer drainage channel being located effectively radially within the other trough and outer drainage channel.

3. An assembly as claimed in claim 2, in which the C-shaped troughs and drainage channels are each formed by straight sections.

4. An assembly as claimed in claim 3, in which the troughs are filled with rectangular paving blocks.

5. An assembly as claimed in claim 2, in which the C-shaped troughs and drainage channels

are arcuate.

6. An assembly as claimed in claim 5, in which the troughs are filled with suitably shaped paving blocks.

5 7. An assembly as claimed in any one of claims 2 to 4, in which the main frame is rectangular and constructed in sections.

8. An assembly as claimed in claim 7, in which said main frame sections are C-shaped.

10 9. An assembly as claimed in claim 7 or 8, in which the main frame has a web across each corner region and an inwardly directed projection located in the middle region of two opposed sides of the main frame, the C-shaped sections being
15 supported on said webs and projections.

10. An assembly as claimed in claim 9, in which the C-shaped sections have corners to which corner posts are attached, the corner posts spacing the C-shaped sections from the main frame to define
20 a uniform outer drainage channel, and projecting beneath the C-shaped sections to engage said webs and thus, in use, support the C-shaped sections above ground level.

11. An assembly as claimed in claim 10, in which each corner post is provided with an aperture
25 into which a lifting tool can be engaged.

12. A drainage channel assembly constructed

and arranged substantially as hereinbefore
described with reference to and as illustrated in
the accompanying drawings.